IN THE CLAIMS:

For the Examiner's convenience, the following is a list of all claims included those that have not been amended in the present response to Office Action.

1. (currently amended) A method for supporting digital signal processing (DSP) of a plurality of data types, the method comprising:

continuously broadcasting a plurality of firmware algorithms toward a plurality of DSPs [engines; and]

selectively monitoring for and receiving at least one firmware algorithm of the plurality of firmware algorithms [by at least]in response to a determination of a data type that one of the plurality of DSPs is to process[engines, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of DSP engines over at least one data line.]; and

processing data with the at least one firmware algorithm and the one DSP, the data being of the data type, the processing to process the data as it travels between networks.

2. (currently amended) The method of claim 1, further comprising:

receiving at least one pulse coded modulation (PCM) data stream from a public switched telephone network (PSTN);

generating at least one packet of data from the PCM data stream [using the received at]with the at least one firmware algorithm and the one DSP; and,

transmitting the at least one packet of data over an Internet Protocol (IP) network, the PSTN being a first of the networks, the IP network being a second of the networks.

3. (currently amended) The method of claim 1, further comprising:

receiving at least one packet of data from an IP network;

generating at least one PCM data stream from the at least one packet of data [using the received]with the at least one firmware algorithm and the DSP; and,

transmitting the at least one PCM data stream over a PSTN, the PSTN being a first of the networks, the IP network being a second of the networks.

E1

4. (currently amended)The method of claim 1, wherein the [at least one data line comprises at least one]data is part of a bidirectional PCM data stream.

5. (currently amended)The method of claim 1, wherein the [at least one data line comprises at least one]data is passed over a bidirectional host bus.

6. (currently amended) The method of claim 1, wherein the plurality of firmware algorithms are continuously broadcasted toward the plurality of [service]

DSPs [engines] by a master DSP engine [resident in]that is implemented with a processor.

7. (currently amended) The method of claim 6, wherein the plurality of firmware algorithms are continuously broadcasted toward the plurality of [service] DSPs [engines] over a channelized serial bus.

8. (currently amended) The method of claim 7, wherein the selectively monitoring for and receiving at least one firmware algorithm comprises [:

determining a data type of the data received into at least one of the plurality of service DSP engines;

determining at least one firmware algorithm required to process the received data;]

determining an address of at least one channel of the serial bus on which the [required] at least one firmware algorithm is available.

9. (currently amended) The method of claim 8, wherein the selectively monitoring for and receiving at least one firmware algorithm further comprises unmasking a bit of an interrupt mask [in the at least one of the plurality of service DSP engines], the unmasked bit corresponding to the address of at least one channel of the serial bus on which the [required] at least one firmware algorithm is transmitted.

10. (currently amended) The method of claim 9, wherein the selectively monitoring for and receiving at least one firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory [of the service]used by the one DSP.

11. (currently amended) The method of claim 8, wherein [each service DSP]a memory accessed by the one DSP comprises data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted.

12. (currently amended)The method of claim 8, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded toward [each service]the one DSP [engine] from the processor.

13. (currently amended)The method of claim 8, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is hard-coded in [each of the]a service DSP engine[s] that the one DSP is a part of.

14. (unchanged) The method of claim 7, wherein each channel of the channelized serial bus transmits at least one firmware algorithm.

15. (currently amended) The method of claim 7, wherein at least one firmware algorithm is transmitted on a channel of the channelized serial bus.

16. (currently amended) The method of claim 7, wherein [an]a firmware algorithm is transmitted using at least one channel of the channelized serial bus.

17. (previously amended) The method of claim 6, wherein the plurality of firmware algorithms are stored in a memory of the master DSP engine.

18. (currently amended) The method of claim 1, wherein [each]the one DSP is part of a service DSP engine that comprises at least one channel.

19. (previously amended) The method of claim 1, wherein the continuous broadcast is repetitive.

20. (currently amended) The method of claim 1, wherein the [plurality of] determined data type[s] [comprise]is one of: modem data, voice data, video data [and]or facsimile data.

21. (currently amended)The method of claim 1[, wherein each of the plurality of DSP engines comprise a memory for]further comprising storing the at least one firmware algorithm into a memory that is accessible to the one DSP.

22. (unchanged) The method of claim 1, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of the plurality of firmware algorithms.

23. (unchanged) The method of claim 22, wherein the at least one serial block comprises 1024 information bits.

24. (unchanged) The method of claim 22, wherein the broadcast of each of the at least one serial blocks is preceded by a broadcast of an address signal, the address signal identifying the firmware algorithm of the broadcasted at least one serial block.

25. (currently amended) An apparatus for supporting digital signal processing (DSP) of a plurality of data types, the apparatus comprising:

a serial bus comprising at least one channel over which a plurality of firmware algorithms are continuously broadcasted; and

a plurality of service DSP engines communicatively coupled to the serial bus and to at least one data line, at least one of the plurality of service DSP

engines designed to selectively monitor for and receive at least one firmware algorithm of the plurality of firmware algorithms [~~that are continuously~~ broadcasted]in response to a determination of a data type that the at least one service DSP engine is to process, wherein the at least one firmware algorithm is used to process data [~~received by the at least one of the plurality of DSP engines~~]of the data type, the at least one service DSP engine to be positioned between a pair of networks, the at least one service DSP engine comprising a DSP and a memory to execute the firmware algorithm[over the at least one data line].

26. (currently amended) The apparatus of claim 25, further comprising a master DSP engine [resident in]implemented with a host processor, the master DSP engine coupled to the serial bus, wherein the master DSP engine continuously broadcasts the plurality of firmware algorithms to the plurality of service DSP engines.

27. (currently amended)The apparatus of claim 26, wherein:

at least one pulse coded modulation (PCM) data stream that is received from a public switched telephone network (PSTN) is carried over the at least one data line;

at least one packet of data is generated from the PCM data stream by the at least one service DSP engine using the received at least one firmware algorithm; and,

the at least one packet of data is transmitted over an Internet Protocol (IP) network, the PSTN network being a first of the networks and the IP network being a second of the networks.

28. (currently amended) The apparatus of claim 25, wherein:

at least one packet of data is received from an IP network;

at least one PCM data stream is generated from the at least one packet of data by the service DSP engine using the at least one firmware algorithm; and

the at least one PCM data stream is carried over the at least one data line and is transmitted over a PSTN, the PSTN network being a first of the networks and the IP network being a second of the networks.

29. (unchanged) The apparatus of claim 25, wherein the at least one data line comprises at least one bidirectional PCM data stream.

30. (unchanged) The apparatus of claim 25, wherein the at least one data line comprises at least one bidirectional host bus.

31. (currently amended) The apparatus of claim 25, wherein the [plurality of]at least one service DSP engine[s] selectively monitors for and receives the at least one firmware algorithm by:

[determining a data type of the data received into at least one of the plurality of service DSP engines;

determining at least one firmware algorithm required to process the received data];

determining an address of at least one channel of the serial bus on which the [required] at least one firmware algorithm is available.

32. (currently amended)The apparatus of claim 31, wherein the [plurality of]at least one service DSP engine[s] selectively monitors for and receives the at least one firmware algorithm by unmasking a bit of an interrupt mask[in the at least one of the plurality of service DSP engines], the unmasked bit corresponding to the address of the at least one channel of the serial bus on which the [required]the at least one firmware algorithm is transmitted.

33. (currently amended)The apparatus of claim 32, wherein the [plurality of]at least one service DSP engine[s] selectively monitors for and receives the at least one firmware algorithm by:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in [a]the memory[of the service DSP].

34. (currently amended) The apparatus of claim 31, wherein [the data]information correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded to each service DSP engine from a host processor.

35. (currently amended) The apparatus of claim 25, wherein the detected data [received by the at least one of the plurality of DSP engines comprises at least one channel of multiplexed data]is received [over]from a public switched telephone network[, the data having at least one of the plurality of data types].

36. (currently amended) The apparatus of claim 25, wherein the [plurality of]determined data type[s comprise]is one of: modem data, [and]voice data, video data or facsimile data.

37. (currently amended) The apparatus of claim 25, wherein each service DSP engine comprises at least one channel.

38. (currently amended) The apparatus of claim 25, wherein at least one algorithm is transmitted on a channel of the serial bus[, the serial bus being a channelized serial bus].

39. (currently amended) The apparatus of claim 25, wherein an algorithm is transmitted using at least one channel of the serial bus[, the serial bus being a channelized serial bus].

40. (currently amended)The apparatus of claim 25, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of the plurality of firmware algorithms[, wherein the portion of each of each of the plurality of firmware algorithms comprises 1024 information bits].

41. (currently amended) A multiservice digital signal processing (DSP) system comprising:

a processor [coupled to at least one data line, the processor comprising]to implement a master DSP engine[, wherein the at least one data line provides a plurality of data types];

a serial bus coupled to the master DSP engine, the serial bus comprising a plurality of channels over which a plurality of firmware algorithms are continuously broadcasted by the master DSP engine; and,

a plurality of service DSP engines coupled to [the]at least one data line and the serial bus, at least one of the plurality of service DSP engines being tailored to selectively monitor for and receive at least one firmware algorithm [over]from the serial bus in response to a determination of a data type that the at least one DSP service engine is to process, wherein the at least one firmware

algorithm is used to process data of [at least one corresponding]the data type, the at least one [received by the at least one of the plurality of] service DSP engine[s over] positioned where the data can be processed as it travels between networks, [the at least one data line,]the at least one service DSP engine comprising a DSP and a memory to execute the at least one firmware algorithm.

42. (currently amended) The system of claim 41, wherein:

at least one pulse coded modulation (PCM) data stream transported over the at least one data line is received from a public switched telephone network (PSTN);

at least one packet of data is generated from the PCM data stream by the at least one service DSP engine using the received at least one firmware algorithm; and,

the at least one packet of data is transmitted over an Internet Protocol (IP) network, the PSTN network a first of the networks, the IP network a second of the networks.

43. (currently amended) The system of claim 41, wherein:

at least one packet of data is received from an IP network;

at least one PCM data stream is generated from the at least one packet of data by the at least one service DSP engine using the at least one firmware algorithm; and,

the at least one PCM data stream is transmitted over a PSTN, the PSTN network a first of the networks, the IP network a second of the networks.

44. (unchanged) The system of claim 41, wherein the at least one data line comprises at least one bidirectional PCM data stream.

45. (unchanged) The system of claim 41, wherein the at least one data line comprises at least one bidirectional host bus.

46. (currently amended) The system of claim 41, wherein the [plurality of]at least one service DSP engine[s] selectively monitors for and receives the at least one firmware algorithm by:

[determining a data type of the data received into at least one of the plurality of service DSP engines and determining at least one firmware algorithm required to process the data type;]

determining an address of at least one channel of the serial bus on which the [required] at least one firmware algorithm is available; and,

unmasking a bit of an interrupt mask in the at least one [of the plurality of] service DSP engine[s], the unmasked bit corresponding to the address of at least one channel of the serial bus on which the [required] at least one firmware algorithm is transmitted.

47. (currently amended)The system of claim 46, wherein the [plurality of]at least one service DSP engine[s] selectively monitors for and receives the at least one firmware algorithm by:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and,

storing the received at least one firmware algorithm in [a]the memory[of the service DSP].

48. (currently amended)The system of claim 46, wherein [the] data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded to each service DSP engine from the processor.

49. (currently amended)The system of claim 41, wherein [the data received by the at least one of the plurality of DSP engines comprises at least one channel of multiplexed data received over a public switched telephone network, the data having at least one of the plurality of]the determined data type[s comprising] is one of: modem data, voice data, video data, [and]or facsimile data.

50. (currently amended)The system of claim 41, wherein each of the service DSP engines comprises at least one channel.

51. (unchanged) The system of claim 41, wherein at least one algorithm is transmitted on a channel of the serial bus.

52. (unchanged) The system of claim 41, wherein an algorithm is transmitted using at least one channel of the serial bus.

53. (unchanged) The system of claim 41, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of the plurality of firmware algorithms.

54. (currently amended) A [computer] readable medium containing executable instructions which, when executed by a digital signal processor (DSP), cause the DSP to perform a method, the method comprising:

selectively monitoring for and receiving [at least one]a firmware algorithm from amongst a plurality of continuously broadcasted firmware algorithms, the selectively monitoring for and receiving being in response to a determination of a data type that the DSP is to process; and,

processing data of the determined data type [data that has been received from a network]with the [at least one]firmware algorithm as the data travels between a telephony network and a data network.

55. (currently amended) The [computer] readable medium of claim 54[,] wherein the processing further comprises generating at least one packet of data from a PCM data stream[, the PCM data stream corresponding to the data], the PCM data stream having [that has]been received from [a]the telephony network.

56. (currently amended) The [computer] readable medium of claim 55[,] wherein the telephony network is a PSTN network.

57. (currently amended) The [computer] readable medium of claim 54[,] wherein the determined data type is [that has been received from a network further comprises] audio data.

58. (currently amended) The [computer] readable medium of claim 54[,] wherein the selectively monitoring for and receiving [at least one]the firmware algorithm comprises:

[determining a data type of the data that has been received from a network;

determining the at least one firmware algorithm;]

determining an address of a broadcast channel where the at least one firmware algorithm is available.

59. (currently amended) The [computer] readable medium of claim 58[,] wherein the selectively monitoring for and receiving [at least one]the firmware algorithm further comprises unmasking a bit of an interrupt mask, the unmasked bit corresponding to the address.

60. (currently amended) The [computer] readable medium of claim 59[,] wherein the selectively monitoring for and receiving [at least one]the firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the [at least one] firmware algorithm in response to execution of the interrupt service routine; and

storing the received [at least one] firmware algorithm in a memory.

61. (currently amended) The [computer] readable medium of claim 54[,] wherein the determined data type is [that has been received from a network further comprises]voice data.

62. (currently amended) The [computer] readable medium of claim 54[,] wherein the determined data type [has been received from a network further comprises]is facsimile data.

63. (currently amended) The [computer] readable medium of claim 54 wherein the determined data type [that has been received from a network further comprises]is modem data.

64. (currently amended) The [computer] readable medium of claim 54 wherein the processing further comprises echo cancellation.

65. (currently amended) The [computer] readable medium of claim 54 wherein the processing further comprises voice coding.

66. (currently amended) The [computer] readable medium of claim 54 wherein the processing further comprises suppression of packet bandwidth utilization during voice silence.

67. (currently amended) The [computer] readable medium of claim 54 wherein the processing further comprises modem relay.

68. (currently amended) The [computer] readable medium of claim 54 wherein the processing further comprises facsimile relay.

69. (currently amended)A [computer readable medium containing executable instructions which, when executed by a digital signal processor (DSP), cause the DSP to perform a method, the] method, comprising:

determining a data type that a DSP is to process while broadcasting a plurality of firmware algorithms;

selectively monitoring for and receiving at least one firmware algorithm from amongst [a]the plurality of continuously broadcasted firmware algorithms; and,

processing data [that is to be transmitted over a network]of the determined data type with the at least one firmware algorithm in order to help transport the data from a first network to a second network.

70. (currently amended)The [computer readable medium]method of claim 69 wherein the processing further comprises:

generating a PCM data stream from at least one packet of data[, the PCM data stream corresponding to the data that is to be transmitted over a network], the first network being a data network, the second network being a telephony network.

71. (currently amended)The [computer readable medium]method of claim 70 [wherein the network is a]further comprising transmitting the data into a PSTN network, the PSTN network being the second network.

72. (currently amended) The [computer readable medium]method of claim 69[,] wherein the determined data [that is to be transmitted over a network further comprises]type is audio data.

73. (currently amended) The [computer readable medium]method of claim 69[,] wherein the selectively monitoring for and receiving the at least one firmware algorithm comprises:

[determining at least one firmware algorithm required to process the data that is to be transmitted over the network;]

determining an address of a broadcast channel where the [required] at least one firmware algorithm is available.

74. (currently amended) The [computer readable medium]method of claim 73[,] wherein the selectively monitoring for and receiving the at least one firmware algorithm further comprises unmasking a bit of an interrupt mask, the unmasked bit corresponding to the address.

75. (currently amended) The computer readable medium of claim 74[,] wherein the selectively monitoring for and receiving the at least one firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory.

76. (currently amended) The [computer readable medium]method of claim 69[,] wherein the determined data type [that is to be transmitted over a network further comprises]is voice data.

77. (currently amended) The [computer readable medium]method of claim 69[,] wherein the determined data type is [to be transmitted over a network further comprises] facsimile data.

78. (currently amended) The [computer readable medium]method of claim 69 wherein the determined data type is [that is to be transmitted over a network further comprises]modem data.

79. (currently amended) The [computer readable medium]method of claim 69 wherein the processing further comprises echo cancellation.

80. (currently amended) The [computer readable medium]method of claim 69 wherein the processing further comprises voice coding.

81. (currently amended) The [computer readable medium]method of claim 69 wherein the processing further comprises modem relay.

82. (currently amended) The [computer readable medium]method of claim 69 wherein the processing further comprises facsimile relay.

83. (currently amended) An apparatus for supporting digital signal processing (DSP), the apparatus comprising:

first means for continuously broadcasting a plurality of firmware algorithms[to a plurality of DSP engines]; and,

second means for:

1) determining a type of data to be processed, the determining occurring while the plurality of firmware algorithms are being broadcasted

2) based upon the determining: determining at least one firmware algorithm from the plurality of firmware algorithms;

3) selectively monitoring for and receiving the at least one firmware algorithm of the plurality of firmware algorithms[by at least one of the plurality of DSP engines, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of DSP engines over at least one data line] and

4) processing data having the determined data type with the at least one firmware algorithm.

84. (currently amended) The apparatus of claim 83, further comprising:

means for receiving at least one pulse coded modulation (PCM) data stream from a public switched telephone network (PSTN);

the processing means of the second means further including means for generating at least one packet of data from the PCM data stream using the received at least one firmware algorithm; and

means for transmitting the at least one packet of data over an Internet Protocol (IP) network.

85. (currently amended) The apparatus of claim 83, further comprising:

means for receiving at least one packet of data from an IP network;

the processing means of the second means further including for generating at least one PCM data stream from the at least one packet of data using the received at least one firmware algorithm; and

means for transmitting the at least one PCM data stream over a PSTN.

86. (canceled)

87. (currently amended) The apparatus of claim 83 wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises:

[means for determining a data type of the data received into at least one of the plurality of service DSP engines;]

means for determining the at least one firmware algorithm;

means for determining an address of at least one broadcast channel where the at least one firmware algorithm is available.

88. (currently amended) The method of claim 87, wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises means for unmasking a bit of an interrupt mask[in the at least one of the plurality of service DSP engines], the unmasked bit corresponding to the address.

89. (currently amended) The method of claim 88, wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises:

means for executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

means for receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

means for storing the received at least one firmware algorithm[in a memory of the service DSP].

90. (currently amended) A method, comprising:

<u>determining a type of data to be processed by a Digital Signal Processor (DSP) while broadcasting a plurality of firmware routines that can be executed by the DSP toward the DSP;</u>

selecting a [software]<u>firmware</u> routine from amongst [a]<u>the</u> plurality of [continuously] broadcasted [software]<u>firmware</u> routines[that are each capable of

being executed by a Digital Signal Processor (DSP)]in response to the determining; and,

processing data [that has been received from a network] by executing the [software]firmware routine upon the DSP, the data being of the data type, the data in transition between networks.

91. (currently amended) The method of claim 90 wherein the processing further comprises generating at least one packet of data from a PCM data stream, [the PCM data stream corresponding to the data that has been received from a network]the data in transition from a data network to a telephony network.

92. (currently amended) The method of claim 91 wherein the telephony network is a PSTN network.

93. (previously added) The method of claim 91 wherein the data further comprises voice or audio data.

94. (currently amended) The method of claim 90 wherein the selecting further comprises:

[determining a data type for the data;]

recognizing that the [software]firmware routine can be used to process data having the data type;

determining where the [software]firmware routine resides amongst the continuously broadcasted software routines.

95. (currently amended) The method of claim 90 wherein the data further comprises [voice]video data.

96. (previously added) The method of claim 90 wherein the data further comprises facsimile data.

97. (previously added) The method of claim 90 wherein the data further comprises modem data.

98. (previously added) The method of claim 90 wherein the processing further comprises echo cancellation.

99. (previously added) The method of claim 90 wherein the processing further comprises voice coding.

100. (previously added) The method of claim 90 wherein the processing further comprises suppression of packet bandwidth utilization during voice silence.

101. (previously added) The method of claim 90 wherein the processing further comprises modem relay.

102. (previously added) The method of claim 90 wherein the processing further comprises facsimile relay.

103. (currently amended) [A method, comprising:

selecting a software routine from amongst a plurality of continuously broadcasted software routines that are each capable of being executed by a Digital Signal Processor (DSP); and

processing data that is to be transmitted over a network by executing the software routine upon the DSP.]

The method of claim 90 further comprising detecting a change in the type of data that the DSP is to process

104. (currently amended) [The method of claim 103 further comprising:

generating a PCM data stream from at least one packet of data, the PCM data stream corresponding to the data that is to be transmitted over a network.]

The method of claim 103 further comprising selecting a new firmware routine from the plurality of broadcasted firmware routines in response to the detecting a change.

105. (currently amended) [The method of claim 104 wherein the network is a PSTN network.]The method of claim 104 further comprising replacing the firmware routine with the new firmware routine in a memory that is accessible to the DSP

106. (currently amended) [The method of claim 104 wherein the data that is to be transmitted over a network further comprises voice or audio data.]The method of claim 105 further comprising processing data having the new data type by executing the new firmware routine with the DSP

107. (currently amended) [The method of claim 103 where the selecting further comprises:

recognizing that the software routine is required to process the data;

determining where the software routine resides amongst the continuously broadcasted software routines]The method of claim 90 wherein a first of the networks is a telephony network and a second of the networks is a data network.

108. (currently amended) [The method of claim 103 wherein the data further comprises voice data] The method of claim 107 wherein the data network is an IP network.

109. (currently amended) [The method of claim 103 wherein the data comprises facsimile data] The method of claim 107 wherein the telephony network is an PSTN network.

110. (currently amended) [The method of claim 103 wherein the data further comprises modem data] The method of claim 109 wherein the data network is an IP network.

111. (currently amended) [The method of claim 103 wherein the processing further comprises echo cancellation] The method of claim 90 wherein one of the networks is a telephony network.

112. (currently amended) [The method of claim 103 wherein the processing further comprises voice coding] The method of claim 111 wherein the telephony network is a PSTN network.

113. (currently amended) [The method of claim 103 wherein the processing further comprises modem relay] The method of claim 90 wherein one of the networks is a data network.

114. (currently amended) [The method of claim 103 wherein the processing further comprises facsimile relay] The method of claim 113 wherein the data network is an IP network.

115. (new) An apparatus, comprising:

a) a processor to implement a master DSP engine that continuously broadcasts a plurality of firmware routines;

b) a plurality of service DSP engines, each of said service DSP engines having its own Digital Signal Processor (DSP) and memory; and,

c) a bus to transport said plurality of firmware routines toward said plurality of service DSP engines, said memory of each service DSP engine capable of storing a particular firmware routine selected from said broadcasted plurality of firmware routines as a consequence of said memory's corresponding service DSP engine having determined the particular firmware routine from a type of data that its constituent DSP is to process.

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116. (new) The apparatus of claim 115 further comprising a PCM stream line coupled to a plurality of said service DSP engines.

117. (new) The apparatus of claim 115 wherein said bus is a channelized serial bus.

118. (new) The apparatus of claim 115 wherein said service DSP engine further comprises a serial port to receive said particular firmware routine.

119. (new) The apparatus of claim 118 wherein said serial port is a TDM serial port.

120. (new) The apparatus of claim 115 wherein said processor is a host CPU.

121. (new) The apparatus of claim 115 further comprising a second memory that is accessible to said processor, said memory to store said plurality of firmware routines.

122. (new) The apparatus of claim 121 wherein said plurality of firmware routines further comprise an echo cancellation firmware routine.

123. (new) The apparatus of claim 121 wherein said plurality of firmware routines further comprise a voice coding firmware routine.

124. (new) The apparatus of claim 123 wherein said voice coding firmware routine is a parametric voice coding firmware routine.

125. (new) The apparatus of claim 123 wherein said voice coding firmware routine is a non-parametric voice coding firmware routine.

126. (new) The apparatus of claim 121 wherein said plurality of firmware routines further comprise a suppression of packet bandwidth utilization during voice silence firmware routine.

127. (new) The apparatus of claim 121 wherein said plurality of firmware routines further comprise facsimile relay firmware routine.

128. (new) The apparatus of claim 121 wherein said plurality of firmware routines further comprises a modem relay firmware routine.

129. (new) The apparatus of claim 115 wherein each service DSP engine is positioned to process data as the data travels between networks.

130. (new) An apparatus comprising:

a service DSP engine comprising a DSP and a memory, said service DSP engine to process data as it travels between networks, said service DSP engine to determine a particular firmware routine from a plurality of continuously broadcasted routines based upon said data's type, said memory to store said particular firmware routine, said DSP to execute said particular firmware routine.

131. (new) The apparatus of claim 130 wherein said plurality of firmware routines further comprise an echo cancellation firmware routine.

132. (new) The apparatus of claim 130 wherein said plurality of firmware routines further comprise a voice coding firmware routine.

133. (new) The apparatus of claim 132 wherein said voice coding firmware routine is a parametric voice coding firmware routine.

134. (new) The apparatus of claim 132 wherein said voice coding firmware routine is a non-parametric voice coding firmware routine.

135. (new) The apparatus of claim 130 wherein said plurality of firmware routines further comprise a suppression of packet bandwidth utilization during voice silence firmware routine.

136. (new) The apparatus of claim 130 wherein said plurality of firmware routines further comprise facsimile relay firmware routine.

137. (new) The apparatus of claim 130 wherein said plurality of firmware routines further comprises a modem relay firmware routine.

138. (new) The apparatus of claim 130 wherein said data's type can be voice, facsimile or modem.

139. (new) The apparatus of claim 130 wherein a first of said networks is a telephony network and a second of said networks is a data network.

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140. (new) The apparatus of claim 139 wherein said data network is an IP network.